

The Development of PIE *ē in Palaic*

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1. The Anatolian languages show considerable diversity in their treatment of Proto-Anatolian *ē < PIE *ē. In Hittite it is true for the most part that the mid-palatal vowels remain unaltered.¹ In Luwian and Hieroglyphic Luwian *ē has generally lost its palatal color and merged with ē² while its long counterpart *ē has become ī under accent and y in unaccented position. A depalatalization process similar to that attested in Luwian has been proposed for *ē in Palaic on the basis of such words as a-aš and a-aš-du < PIE *h₁es and *h₁estu, the second and third singular imperatives of the verb 'be' (see e.g. Kammenhuber 1959:30; Puhvel 1966:239; Friedrich 1960:183; Carruba 1970:39; and Oettinger 1979:558³). Similarly, the treatment of *ē in Palaic is said to parallel that of Luwian, e.g. *ē > ī/y in ū-i-te/ti-si < uēdhēsi 'you build' (see Oettinger 1979:130). There are, however, a number of reasons to question the claim that Palaic and Luwian have treated the Proto-Anatolian mid-palatal vowels in an identical fashion.

The evidence for a sound change *ē > ā in Palaic is quite tenuous. In fact there appear to be only two legitimate examples of the change: a-aš and a-aš-du. Other presumed examples of *ē > ā are of questionable value and in most cases, if not all, more appropriate derivations, which involve no such hypothesized change, can be offered (see below pages 3ff and 6). Further, the plene writing of these forms (a-aš not **aš, a-aš-du not **aš-du) indicates that the root vocalism here is phonetically long and not short as would be expected were the vocalism the direct reflex of *ē via sound change.⁴ Thus, if a sound change *ē > ā is to be proposed for Palaic, perhaps on the basis of a-aš and a-aš-du alone, then the lengthening process, by whatever means, must be satisfactorily explained in relation to the change *ē > ā. These facts, in addition to the fact that possible counterexamples to a change *ē > ā exist (see below page 2), prompted Calvert Watkins in his article 'A Palaic Carmen' (Watkins 1978:309) to suggest that *ē may indeed have remained in Palaic.

The sound change *ē > ī/y is based upon the etymologies of two forms: Palaic ni-i 'not' < PIE *nē (Oettinger 1979:535) and ū-i-te/ti-si < *uēdhēsi 'you build' (Oettinger 1979:130). Both words are of questionable value as evidence for *ē > ī/y because the etymologies which have been suggested can be disputed. For the form ni-i Heiner Eichner (MSS 29:40 footnote 33) has proposed a derivation from PIE *nei (compare Latin (archaic) nei, (classical) nī 'not', Oscan nei 'not', Lithuanian niē-kas 'no one', and Avestan naēcis (Pokorny IEW 757)). This etymology has the advantage of utilizing a sound change which must be independently reconstructed for the language on the basis of a form with an unquestioned

etymology: ki-i-ta-ar 'lies' < *keitore (see N. Oettinger MSS 34:113 and 1979:536; H. Eichner MSS 31:78 and 80). Oettinger (1979:130 and footnote 84) has argued that the pre-form of Palaic ú-i-te/ti-ši is likely to be *uēdhēsi, with a long vowel in the first syllable, based on the evidence of the Lydian form vici- < *uēdhē- 'build'. But the derivation of Palaic ú-i-te/ti-ši from a pre-form *uēdhēsi involves at least two problems. First, one must assume that the [ĩ] vowel in the second syllable (after the proposed sound change *ē > ĩ in unaccented position) can be represented by a Ce sign (note that this word is written ú-i-te-ši (2x), ú-i-ti-ši (1x)). But there is no reason to expect Ce to represent [ĩ] phonetically since the appropriate Ci sign would exist in every case (e-valued signs are lacking in a considerable number of cases, see H. Eichner 1980:133 and E. Sturtevant 1933:43-46 and 50-52). Thus, while fluctuations in representation (e-i) may indicate that the vowel in this syllable is indeed short (so it is argued by Oettinger 1979:130), it is more likely that such fluctuations are indicative of [ě] rather than [ĩ] (see Oettinger 1979:130 and 533 ff.). As a result the second syllable of ú-i-te/ti-ši is a problem for the claim that the development of *ē is parallel in Luwian and Palaic. Second, the Hittite cognate (compare, for example, ú-e-te-iz-zi 'builds'; see also Oettinger 1979:129-130) appears to agree with Palaic forms with respect to quantity of the initial syllable, short not long (and the quality of the second, e not i). Further, Oettinger's claim (1979:130) that the Hittite forms reflect a vowel shortening process in the first syllable 'im Nebenton' is completely ad hoc. No evidence is adduced for the shift of (primary?) stress from the pre-verb to the verbal root in verbs of the pehutē-Class (Oettinger's Class I 2 g; see Oettinger 1979:36 ff. and 125 ff.)⁵ In fact it is suggested (Oettinger 1979:36 and 107 footnote 43) that stress on the pre-verb shortened long vowels in subsequent syllables.⁶ Moreover, even if we grant such a shortening process in the first syllable of this Hittite verb, it is still possible to claim that the vowel quantity in the first syllable of the Palaic word is short and hence that Palaic too must have had such a process. The writing ú-i- may indicate not only a long [ĩ] but also a short [ě] or [ĩ] (see Oettinger 1979:533 and 1979a:201). In light of all of these problems with the etymology of ú-i-te/ti-ši there is no overriding necessity to assume that Oettinger is correct in his claim that the pre-form in Palaic contained a long vowel in the first syllable. The possibility exists that the Hittite and Palaic forms, though perhaps ultimately from Proto-Anatolian *uēdhēsi, are to be derived from an intermediate pre-form with a short vowel in the initial syllable: *uēdhēsi. As a result the claim that Palaic has evidence for a sound change *ē > ĩ/ĩ is questionable.

Over and above the shortcomings of these proposed sound changes, there is a more serious problem. The major developments of the mid-palatal vowels offered thus far fail to account satisfactorily for all of the morphemes which have e-vocalism and are of PIE origin: e.g. ú-e-ir-ti 'says' < *uer (IEW 1162); -Ci/e-eš 'nominative plural' < *-ēs consonant stem ending (Kammenhuber 1959:33 footnotes 1 and 2) or *-ēs < *-eies i-stem ending⁷; (-)eš-hu-ur/(-)e-eš-ha/(-)e-eš-ha-na 'blood' < *h₁ēsh₂r (IEW 343 and Tischler 1977:112-115); te-e-ka-an-za

te-ta-a-an-za 'flowing' < *tek (IEW 1059 and Watkins 1978: 311⁸). It can be shown that neither phonological development proposed for the palatal vowels is compatible with the other when these morphemes are considered.

The sound changes *ě > ǎ and *ē > ī/ĩ were reconstructed on the basis of the following items: a-aš/a-aš-du 'be' < *h₁es- (IEW 340); -ua-ni 'first person plural' < *-ueni; -uar- 'particle of direct speech' < *uer- (IEW 1162); ua-at-ta-na 'in water (?)' < Pre-Palaic *ueteno (?); ma-li-ta-an-na-as 'honied' < *melit- (IEW 723) for *ě > ǎ; and ni-i 'not' < *nē (IEW 756) and ú-i-te/ti-si 'you build' for *ē > ī/ĩ. If we agree that *ě > ǎ then it is impossible to fit the remaining lexical items with e-vocalism into the system of phonological developments. Neither ú-e-ir-tinor -Ci/e-eš can be allowed to have short e-vocalism because these items would then form counterexamples to those very words used to argue for *ě > ǎ, specifically -ua-ni, -uar-, ua-at-ta-na, and a-aš/a-aš-du (note that the phonetic environments for the opposing sets of words are identical: after u and before s). But if it is assumed that the vocalism in question in these words is long, a suggestion which is perfectly plausible, then it is impossible to maintain *ē > ī/ĩ in Palaic. Since the environment in which *ē is found is identical in both words, after u, it is impossible to plead for a special phonological development. Rather one is compelled to concede that *ē > ī/ĩ is an impossible development, especially in light of the remaining words (-)eš-hu-ur/(-)e-eš-ha/(-)e-eš-ha-na and te-e-ka-zn-za/te-ta-a-an-za which could be offered as corroborative evidence for *ē > ē. The same incompatibility can easily be shown if one uses the suggested sound change *ē > ī/ĩ as a starting point. In this case the evidence speaks for itself: *ě > ǎ and *ē > ī/ĩ are mutually exclusive.

Thus, whatever position is taken with respect to the changes *ě > ǎ and *ē > ī/ĩ it is clear that they are mutually exclusive and that the evidence for the development of the mid-palatal vowels in Palaic needs to be reexamined and a hypothesis offered in which the phonological developments are accounted for in a way which is consistent with the data, which allows for natural phonological developments, and in which the end product is a reasonably well organized synchronic system. This paper is an attempt to suggest such a hypothesis.

2. Any discussion of the treatment of PIE mid-palatal vowels in Palaic is troubled from the outset. Essentially this is the result of a combination of facts. First, the existing Palaic texts were written by scribes who were native Hittite speakers. As a result the texts contain errors in representation of words as well as failures to make word divisions. Second, there are only a small number of morphemes inherited from PIE which can be used as evidence for phonological developments. Moreover, the writing system does not possess the means to distinguish e and i in all phonetic contexts. And finally, the indication of the quantity of medial vowels is in some cases ambiguous (see Oettinger 1979: 533 ff.). As a result considerable diversity in the treatment of possible phonological developments is conceivable.

The data which are relevant to a discussion of the development of the mid-palatal vowels in Palaic can be most conveniently divided into categories on the basis of a rather disparate and sometimes overlapping set of criteria.

A. The vocalism of the item in question is ambiguous due to the fact that there is no Ce sign available to represent e-vocalism. Hence Ci may be used to represent [Ce] or [Ci] phonetically. To this category belong: az-zi-ki-i 'gobble up' < *ats-e/i-kī < *h₁d-ské⁹; gi-nu-kat 'flesh or part of the body' < *genu-g(h)od¹⁰; ki-is-ta-a-am-mu 'expired, dull, faded' + the dative of the first person singular enclitic pronoun < *gesdhont-mu.¹¹

B. The vocalism of the item in question is ambiguous due to the manner in which it is represented by the writing system (for the representation of e in the Hittite writing system see Oettinger 1979: 533 ff.). Included in this category are: 1) ē-ē u-e-ir-ti 'says'; -Ci/e-es 'nominative plural'. 2) ī-i-ē in the first syllable of ū-i-te/ti-ši 'you build'. 3) ē-ē-ī in the second syllable of ū-i-te/ti-ši. 4) ē-ī ša-a-ū-i-ti-ra-an(-) 'horn' < *sauetran < *souh₁-e-tro-m (Oettinger 1979a: 201-202)¹².

C. The vocalism of the item is questionable because alternant pre-forms can be suggested. ma-li-ta-an-na-as 'honied', -ua-ni 'first person plural', ua-a-su 'well-', -uar- 'particle of direct speech', belong in this category¹³.

ma-li-ta-an-na-as. If this form is to be derived from the stem *melit- via the addition of the possessive suffix *-h₃on- (see Eichner 1980: 147 footnote 69) then a basic form with zero grade vocalism of the root syllable, *mlithon-, is to be preferred to full grade. The orthography supports such a hypothesis because a (ma-) is the graphic representative of an empty vowel.

ua-a-su. The root vocalism of ua-a-su is difficult to ascertain because the original ablaut alternations of u-suffixed (o in strong cases: e in weak cases) substantives was generally leveled in favor of one of the alternants (compare Latin genu : Hittite gēnu but Greek γόνυ : Sanskrit jānu 'knee' (IEW 380)). However, since o-vocalism is original in the nominative-accusative form, and since we have no reason to believe this situation was otherwise for this word in Palaic, it is reasonable to maintain that the root vocalism in this form was originally *o, *h₁uosu.¹⁴ The length of the vowel in this form is undoubtedly the result of the lengthening process described in Oettinger 1979: 447 ff. and Eichner 1980: 144 footnote 67.

-ua-ni. Oettinger (1979: 566 footnote 12) claims that Palaic and Luwian -ua-ni 'first person plural' is to be compared with Hittite -ue-ni and as a result reflects the sound change *ē > ā.¹⁵ It should be pointed out however that a variant inflectional ending with a-vocalism occurs in Hittite, particularly in the older period (see Oettinger 1979: 9). As a result one could argue that two variant endings existed in Proto-Anatolian, -ue-ni and -ua-ni, and that Palaic has simply generalized the use of the -ua-ni variant at the expense of -ue-ni. It is thus difficult to use -ua-ni as evidence for a sound change *ē > ā.

-uar-. The standard etymology of -ua(r)- (Palaic has simply -uar- but Hittite shows two phonologically conditioned variants -ua- and -uar-) connects it with the root *uer- (IEW 1162; see, for example, Eichner 1975: 84; Oettinger 1979a: 201), compare Hittite ueriya- Palaic ú-e-ir-ti, Latin uerbum, and Greek ερέω. The disadvantage of such an etymology, the fact that it fails to account for the -ua-/-uar- alternations in Hittite, has been pointed out by B. Joseph (1982) in his article 'Hittite iwar, wa(r), and Sanskrit iva'. Joseph, developing an etymology first suggested by J. Przyluski in 1934, persuasively argues that -uar- is composed of a particle *ue/o- with an adverbial suffix -r.¹⁶ If Joseph's etymology is correct then the Palaic form -uar- is unacceptable as evidence for *ē > ǎ because the Hittite forms -ua-/-uar- show that the vocalism was originally *o not *e.

D. The lexical item is of questionable value as evidence because alternate writings make it difficult to decide on a pre-form. lu-ki-it (lx)/lu-u-ki-it (lx)/lu-ki-i-it (7x) 'break into pieces' or 'ignite' belong to this category.

Eichner (MSS 31: 81), following the suggestion of A. Kammenhuber BSL 1959: 29, has proposed that the Palaic forms cited above be derived from *léuket 'ignite'. However the fact that plene writing occurs only one time in the first syllable makes such a proposal unlikely. Oettinger (1979: 276 footnote 35) is probably correct in assuming that this word is a secondary formation in *-iē- and that this verb provides evidence for a special development of *ē, *ē > ī / ĭ. Carruba (1970: 62) has suggested that the meaning of this word is actually 'break into pieces', a perfectly acceptable meaning in the context of a bread ritual. The PIE root *leuǵ- 'break up' can be offered as an etymology (compare Sanskrit rujāti 'break into pieces', Lithuanian laužiu/laužti 'break up', and possibly Latin lūgeō 'mourn'¹⁷, IEW 686). The Palaic verb is then likely to be a deradical -iē- formation similar to Hittite forms discussed by Oettinger (1979: 343 ff.). Since both full and zero grade forms of the root are attested in Hittite, it is impossible to decide whether the root in this case had full grade vocalism with a subsequent sound change *eu > ū in unaccented position or whether the vocalism of the root was zero grade to begin with, *leuǵ-iē-t or *luǵ-iē-t > Palaic lu-(u)-ki-(i)-it.

E. The lexical item is of questionable value due to a scribal error or due to an error of identification on our part.¹⁸ te-e-ka-an-za/te-ta-a-an-za belong to this category because of the ka-/ta- alternation; (-)eš-hu-ur/(-)e-eš-ha/(-)e-eš-ha-na belong here because in every case the form is written together with hapari- (ha-pa-ri-i-ši-e-eš-ha-na/ha-pa-ri-ua-ni-e-eš-ha) or hinapi- (hi-na-pi-eš-hu-ur).

F. The lexical item is of questionable value as evidence because the forms attested in the texts present special problems in phonological development. The various forms of the word 'blood', ua-at-ta-na 'in water (?)', ša-a-ú-i-ti-ra-an(-) 'horn', and ša-pa-ú-i-na 'purifies', belong to this category.

The various forms of 'blood' are of questionable value not only because of the 'Zusammenschreibung' with hinapi- and hapari- but also because it is uncertain how the Palaic forms match up with corresponding

forms in other Anatolian languages. Carruba (1970: 53) suggests that (-)eš-hu-ur and (-)e-eš-ha are both nominative-accusative singular forms. (-)e-eš-ha matches up quite well with Hittite ēšhar in terms of the initial vowel and with Luwian asha(r) in terms of the loss of final -r but exactly how (-)eš-hu-ur fits into this scheme is not clear. If (-)eš-hu-ur is indeed a nominative-accusative form then the -ur must be explained as a special auslaut development since (-)e-eš-ha and other forms such as karsandu 'cut' < *krsēntu (IEW 938) indicate that the regular development of *r is -ar (with -ar > a in the context ____#C). The texts in which the forms (-)eš-hu-ur and (-)e-eš-ha occur show that these forms do occur in different phonetic environments: (-)eš-hu-ur an-na-as 5 A KUB XXXV 163 21', (-)e-eš-ha ti-ua-ni 5 A KUB XXXV 163 13. Hence we might tentatively suggest that *r > -ar (with subsequent loss of r) in the context ____#C and r > -ur in the context ____#V, though phonetic motivation for such a development is difficult to discern.¹⁹

ua-at-ta-na. Carruba (1970:79) has proposed that this Palaic word is to be compared with Luwian uattanei from an unattested *uatar. Oettinger, following this suggestion, has proposed that these forms are to be compared with Hittite [uedeni] 'in water' (Oettinger 1979: 535). Such a relationship must be considered speculative because the Palaic and Luwian forms have fortis consonants medially while Hittite attests a lenis stop.²⁰

ša-a-ú-i-ti-ra-an(-). This form is not problematic because the Hittite scribe has failed to make what in our opinion must be a word division following the sign -an but rather because of the -i- vocalism after the t. Oettinger (1979a: 202) notes this problem but leaves it unresolved.

ša-pa-ú-i-na-i. Oettinger (1979: 535) relates this Palaic word to the Hittite form šippāi- 'scrape off' (Friedrich 1952: 193). There are a number of problems with such a correspondence. First, the medial consonants do not match up. Hittite has a fortis stop, Palaic a lenis. Second, no attempt is made to explain the additional suffixal material -ú-i-na- (-i is the -hi conjugation third singular present ending). Finally, it should be noted that Hittite does possess a verb šap- 'scrape off' (see Friedrich 1952: 183) which is probably to be connected with šipāi- in some way. Thus it is conceivable that Palaic ša-pa-ú-i-na-i corresponds to šap- rather than to šipāi-.²¹

G. The lexical items are problematic because the vowels in question are unexpectedly written plene. In this category belong: a-aš/a-aš-du and ka-a-ar-ti 'in the heart'. But the a-vocalism of ka-a-ar-ti is not at issue here since it is the result of a Proto-Anatolian change whereby *ē > ā in the environment ____R (esonant) C (see (Oettinger 1979: 534).

H. The lexical item is of questionable value as evidence because of possible Hittite origin. The forms az-zi-ki-i and e-eš-ta 'was' belong to this category.

az-zi-ki-i. Watkins (1969: 73) assumes that this form is a genuine Palaic word. Carruba (1970: 52) notes that this form might be a Hittite loan, or at least a Hittitized form. There are two reasons why Carruba might be right. First, if the form is Palaic then the epenthetic vowel

-i- (-zi-) must be explained. Oettinger (1979: 318) has argued for a vowel epenthesis process in Hittite in which a vowel with the quality [e] is inserted into -Csk- clusters (*-Csk- > -Cs-e-k-). If we argue that Palaic shared such a process with Hittite then we are forced to admit another example of *ě which does not become ǎ. Second, only Palaic outside of Hittite provides evidence for an iterative-durative formation in *-ske/o-, and this only in the verb az-zi-ki-i. The rest of the Anatolian languages, Palaic included, show evidence for an iterative-durative in -ša (see Watkins 1969: 73). As a result, it is at least possible that the Palaic form az-zi-ki-i is actually a Hittite loan.²²

e-eš-ta. The questionable status of this word is undoubtedly due to the fact that Palaic is assumed not to have continued PIE e-vocalism. A final decision with respect to the status of the form, Palaic or Hittite, cannot legitimately be made until the development of PIE *ē has been determined. If warranted, it could be argued that this form is a legitimate Palaic word.

3. The relevant lexical items left as residue are a-ni-it-ti 'performs, accomplishes' < *h₃n-iē-ti (Oettinger 1979: 535 and 559) and par/pa-ar-ku-i-ti < *bhr̥ghu-iē-ti 'cleanses' (see Oettinger 1979: 330 ff.). These verbs are secondary derivatives in *-iē- and clearly show a special development of *ē > ī after the palatal glide ī (see Oettinger 1979: 535).

4. The preceding division of Palaic lexical items makes it very clear that a considerable portion of the discussion of the development of *ē in Palaic is necessarily speculative. While it is possible to develop a consistent picture of the development of these vowels, the particular picture developed will depend on one's evaluation of the forms in the various categories. If it is argued, for whatever reason, that a-aš and a-aš-du are excellent examples of *ē > ǎ (with subsequent lengthening) then possible interpretations of other categories will be delimited in some ways. For example, Class A forms will be seen as special developments of *ē after velars; Class B 1 forms will be derived from proto-forms containing *ē. If one claims on the other hand that Class A and B forms are best treated as continuing PIE *ē, then Class C items will be given non-a derivations, and the forms in Class G (a-aš and a-aš-du are the forms at issue here) will be considered to have a-vocalism but of a secondary and non-phonological origin. The main difficulty then is to find criteria which will allow one to make a decision as to whether the starting point should be *ē > ǎ or *ē > ě. At this point we doubt whether there is any truly principled way to decide.

5. N. Oettinger, in his 'Exkurse zur Lautlehre und den anat. Schwester-sprachen' (Stammbildung 1979: 530 ff.), has argued "dass Palaische und das Urluwische auf eine gemeinsame, das Hethitische nicht mehr einschliessende Vorstufe zuruckgehen." If we accept Oettinger's proposal let us say on the basis of morphological innovations, then we would be inclined to adopt a solution which enables us to assume the greatest number of common phonological innovations.

In light of such reasoning it is undoubtedly best to select the change *ē > ǎ as the basic phonological development with the forms a-aš/a-aš-du as representatives of such a change. The forms in Class C and Class F (ua-at-ta-na and ša-pa-ú-i-na-i are the items at issue here)

may be seen as evidence in support of such a change, but only at the expense of excluding ú-i-te/ti-si and sa-a-ú-i-ti-ra-an(-) from consideration. Note that since the phonetic environments in both sets of words are the same, after u, it is necessary to dismiss one set from the discussion. Though there are problems with the forms ú-i-te/ti-si and sa-a-ú-i-ti-r-an(-) these two items are as a whole less problematic than the relevant forms in Classes C and F. In fact the syllable in sa-a-ú-i-ti-ra-an(-) which is relevant to our discussion is not terribly problematic at all. As a result it is probably best to argue that the Class C and F forms (save sa-pa-ú-i-na-i) should be dismissed from the analysis altogether and that ú-i-te/ti-si, if it is to be derived from *uēdhēsi, and sa-a-ú-i-ti-ra-an(-) provide evidence for a special development of *ē to ī after u.

Class A forms gi-nu-kat and ki-iš-ta-a-am-mu in conjunction with the Class D form lu-(u-)ki-(i-)it and the residue lexical items a-ni-it-ti and par-/pa-ar-ku-i-ti may be seen as evidence for the special development of *ē to ī after the palatal consonant ī and after velar consonants (which were presumably palatalized, hence the development *Ce > *C'e > C'i).

In sum the contexts for which we must assume special developments of *ē must be extended from 'after ī and consonants with the features [+ back and + stop]' (proposed by Oettinger 1979: 535) to 'after ī and consonants with the features [+ back]'.²³ In passing we note that Luwian seems to provide evidence for such a development also, compare Luwian ú-i-it-pa-ni- 'old' with Hittite [uetspant-].²⁴

The Class A form az-zi-ki-i, due to its medial vocalism -zi- [tse] (for which see Oettinger 1979: 318), is best considered as a Hittite or 'Hittitized' form.

The phonological developments of PIE *ē (for PIE *eh₁e > Proto-Anatolian *ē and PIE *e₂e > Proto-Anatolian *ē see section 6) in Palaic are:

1. *ē > ī / ī : a-ni-it-ti 'performs' < *h₃n-īe-ti; par-/pa-ar-ku-i-ti 'cleanses' < *bhr̥ghu-īe-ti; lu-(u-)ki-(i-)it 'break into pieces' < *leuǵ-īe-t or *luǵ-īe-t.
2. *ē > ī / [+ back] : gi-nu-kat 'flesh or part of the body' < *ǵenu-h(h)od; ki-iš-ta-a-am-mu 'expired' + dative of the first person singular enclitic pronoun < *gesdhont-mu; sa-a-ú-i-ti-ra-an- 'horn' < *souh₁etrom; ú-i-te/ti-si 'build' < *uēdhēsi.
3. *ē > ā in all other contexts²⁵: a-aš/a-aš-du 'be' < *h₁es/*h₁estu; and possibly sa-pa-ú-i-na-i 'purifies', if this form corresponds to Hittite šipāi- [sepae-] 'scrape off'.

These developments are the same (with the exception of 2) as those suggested by Oettinger (1979: 535) except that he bases development 3 on lexical items from Classes C and F (ma-li-ta-an-na-aš, -ua-ni, ua-at-ta-na, sa-pa-ú-i-na-i) and not specifically (see footnote 3) on a-aš and a-aš-du which are problematic due to the length of the initial vowel.

Two avenues of explanation are open for explanation of length in these forms. Palaic offers some evidence that accented (PIE accent) syllables had their vowels lengthened: the plene writing of such forms as

a-aš/a-aš-du, a-hu-ua-a-an-ti (lx) 'drink', a-ta-a-an-ti (2x)/a-da-a-an-ti (lx) 'eat', mu-ú-ši (if from mūsi, see Oettinger 1979: 560; contra Oettinger, see Eichner 1975: 86 footnote 6) : mu-ša-a-an-ti 'stuff oneself full', ka-a-ar-ti 'in the heart', ua-a-šu 'well', could form the basis for such an argument. However, numerous forms exist without plene writing where such a hypothesis would lead us to expect it, and in some forms (e.g. šu-ú-na-at 'fill' < *su-néh-t, see Oettinger 1979: 159) plene writing is found in syllables which did not bear PIE accent. Moreover, the fact that Luwian attests a long vowel in the same form (a-aš-du third person singular imperative of 'be', Oettinger 1979: 561) indicates that the lengthening process may have been common to both Palaic and Luwian. If so then we should probably abandon the hypothesis suggested above and seek a solution which can be shared by Palaic and Luwian.

As far as it is possible to tell there is no evidence for a common phonological process lengthening vowels in Palaic and Luwian. As a result it is probably best to attempt a morphological solution.

Palaic shows evidence for a phonological process monophthongizing diphthongs: *éi > í in ki-i-ta-ar, *eu > ū in lu-(u-)ki-(i-)it (if from full grade of the root *leug-) *ou > ū (if from *mousei 'stuff oneself full' after Eichner 1975: 86 footnote 6; for possible etymology compare Greek μῶ 'close lips' and αὐστρί '(drink something) in one pull'). In Luwian there is evidence at least for the development *éi > í (Oettinger 1979: 535-536). Such monophthongization processes may provide a key to the length of the root vowel in Palaic a-as/a-aš-du and Luwian a-aš-du. Such phonological developments in amphikinetic -mi verbs with a root shape TEUT would have resulted in a restructured ablaut pattern: EU : U \Rightarrow ū : U. On the basis of such a pattern it is possible to imagine that ablaut was restored to verbs that had previously had it eliminated due to the sound change *ē > ā : *es- : *as- \Rightarrow *as- : *as-. The suggested developments may thus be sketched: *es- : *as- \Rightarrow *as- : *as- \Rightarrow āš- : āš- (Palaic a-aš/a-aš-du : a-ša-an-du/a-še-en-du²⁶) on the basis of verbs with ū : U ablaut. If such a development is considered plausible then one of the major stumbling blocks to the claim of a phonological development *ē > ā has been removed.

6. Finally the forms in Classes B1. 2. 3., E, and H must be interpreted in light of the developments proposed thus far. Some variation in details may again be possible.

It seems clear that the forms of Class B1. are to be derived from pre-forms with long *ē vocalism: ú-e-ir-ti < *uérti; -Ci/e-eš < *-ēs < *-eies (compare the situation in Latin where the contracted i-stem nominative plural ending was generalized as the ending of C-stem nouns, e.g. ducēs 'leaders'); occasional plene writings in Hittite may be offered as support for such a derivation.²⁷ The Class E form te-e-ka-an-za/te-ta-a-an-za may also be derived from a pre-form with long ē vocalism, provided we assume that the -ta- in te-ta-a-an-za is a scribal error (see Watkins 1978: 310). If we assume that te-e-ka-an-za is the correct representation for this word then long ē vocalism is not an unreasonable assumption in light of the fact that the consonant *k has apparently been lenited to g after ē (for the lenition of consonants after ē see H. Eichner MSS 31: 79 ff.). The remaining Class E forms (-)e-es-ha etc. can be used as evidence to support the development *ē > ē since plene writing in two

of the alternants indicates that the pre-form was probably $*h_1\tilde{e}sh_2r$. The Class H form e-es-ta 'was' may actually be a legitimate Palaic form. Since we are arguing that PIE $*\tilde{e}$, PIE $*eh_1e$ > Proto-Anatolian $*\tilde{e}$, and PIE $*eie$ > Proto-Anatolian $*\tilde{e}$ remain in Palaic there is no basis upon which to claim that this form is a Hittite loan.

Class B 2. and 3. forms ú-i-te-si/ú-i-ti-si, in light of the developments proposed thus far, must be interpreted as coming from a pre-form $*uedh\tilde{e}si$. Thus the second syllable of this form may contain a special development of $*\tilde{e}$, if Oettinger is correct in assuming that long vowels were shortened in unaccented syllables in Proto-Anatolian (see Oettinger 1979: 36 and 125; see also H. Eichner 1980: 163). But, in order to maintain this position, it is necessary to claim that the vowel which resulted from this Proto-Anatolian shortening process was phonetically different than original $*\tilde{e}$ since only $*\tilde{e}$ undergoes the depalatalization process.

The phonological developments for PIE $*\tilde{e}$, PIE $*eh_1e$ > Proto-Anatolian $*\tilde{e}$, PIE $*eie$ > Proto-Anatolian $*\tilde{e}$ in Palaic are:

4. $*\tilde{e}$, eh_1e > $*\tilde{e}$, $*eie$ > $*\tilde{e}$, > \tilde{e} : ú-e-ir-ti 'says' < $*u\tilde{e}rti$; -Ci/e-eš < $*-\tilde{e}s$ < $*-eies$ 'nominative plural'; (-)e-eš-ha etc. 'blood' < $*h_1\tilde{e}sh_2r$; te-e-ka-an-za 'flowing' < $*t\tilde{e}konts$; and possibly e-eš-ta 'was' < $*e-h_1es-t$ (see H. Eichner 1975: 78), if this is a legitimate Palaic form.²⁸
5. $*\tilde{e}$ > \tilde{e}^h (a raised mid-palatal vowel) in unaccented position: possibly ú-i-te/ti-si 'you build' if from < $*u\tilde{e}dh\tilde{e}si$.

7. Such a series of phonological developments as those suggested above necessitate a revision in the number of innovations shared by Palaic and Luwian. While it is still possible to claim that $*\tilde{e}$ > \tilde{y} after j and [+back] consonants (note the addition of u to the context in which this special development takes place) and that $*\tilde{e}$ > \tilde{a} in all other phonetic contexts it is no longer possible to claim that Palaic and Luwian share a common development for the long mid-palatal vowel. It will now be necessary to argue that $*\tilde{e}$ remained during the common period of development and that the change of $*\tilde{e}$ > \tilde{i}/\tilde{y} is actually a Luwian innovation.

Footnotes

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1. For the special treatments of *ě and *ē in Hittite see Oettinger 1979: 448 and 533-545 and H. Eichner 1980: 144 footnote 65.
2. For the special treatment of Luwian ě see Oettinger 1979: 535.
3. It is difficult to determine Oettinger's stand on a-aš/a-aš-du because he doesn't use it directly as evidence for *ě > a (for which see page 535). However, on page 558, in his survey of Anatolian verbal classes a-as/a-as-du are considered examples of Inflectional Class = Hittite I 1 a, i.e. -mi conjugation without stem ablaut (for which in Hittite see Oettinger 1979: 184 ff.).
4. For a discussion of the phonetic reality behind the plene writing of vowels see Oettinger 1979: 533 ff. (For a discussion concerning the Hittite writing system and its representation of Hittite phonology see Eichner 1980.) The assumption that length is indicated by plene writing forms the foundation for a number of hypotheses concerning the development of the Anatolian phonological system in Eichner 1971, 1973, 1975, 1980 and Oettinger 1976, 1979, and 1979a.
5. It may be plausible to suggest that the accent of verbs of the pehutē Class shifted their accent from the preverb to the verbal root on the basis of the accent of the simplex *dhēh- (for simplex forms see Oettinger 1979: 109).
6. For additional examples of shortening of long vowels in unaccented syllables see Eichner MSS 31: 76-79 and 1980: 161-163. Eichner claims this process is Proto-Anatolian.
7. The possibility that Palaic may have generalized *-ēs < *eies at the expense of *-es was suggested to me by H. Eichner (personal communication).
8. For most of the forms in Pokorny (IEW 1059) a labio-velar is required. Watkins argues that a labio-velar may well have been generated in dialectal IE times from adjective forms in -u (see Pokorny *teku- and thematized *teku-). For parallel cases see Watkins (1978: 311).
9. For epenthesis in Hittite in -Csk- clusters see Oettinger 1979: 318. Oettinger claims the epenthetic vowel in these cases has the quality [e]. For development of the first laryngeal see Benveniste 1935: 49 and also Eichner 1975: 95.
10. Tischler (1980: 553) discusses the suffix -kat. The fact that the root has e-grade vocalism is the result of leveling. The original paradigm had o-grade in strong cases and e-grade in weak cases; see H. Eichner 1979: 59.

11. For the etymology of this word see Tischler 1980: 592-593 and Oettinger MSS 34: 129-130.

12. For a discussion of this Palaic form and its Hittite counterpart see Oettinger (1979a: 197-204).

13. Puhvel (1965: 240) cites the Palaic root ahu-, a-hu-ua-(a-)an-ti 'they drink', as corresponding to the Hittite root eku- 'drink'. But there is no evidence that the vocalism in the plural in Palaic was *ě since the corresponding Hittite plural form shows a-vocalism also: a-ku-ua-an-zi/a-ku-an-zi 'they drink'. As a result Puhvel's correspondence is not valid. Rather Palaic ahu- is to be compared to Hittite aku-. The same is also true of Palaic at-/ad- 'eat' and Hittite ad- since once again the Palaic forms are only attested in the plural: a-ta-a-an-ti (2x)/a-da-a-an-ti (1x).

14. The e-vocalism in *ġenu -g(h)od > gi-nu-kat must be explained as generalization of *ě from weak cases.

15. Oettinger (1979a: 201 footnote 25) admits that this correspondence is not sure. See also the brief discussion in Kammenhuber (1959: 38-39 and footnote 3 page 38).

16. For further discussion of the formal and functional advantages of such an etymology the reader is referred to Professor Joseph's article.

17. For a similar extension of the meaning 'break up' compare English 'break up' in the sense 'to lose control of oneself': He was all broken up (i.e. with grief) by the death of his aunt.

18. For a brief discussion of errors made by Hittite scribes see Watkins (1975 and 1978).

19. It should be noted that the form (-)eš-hu-ur may not even be related to the forms (-)e-eš-ha/(-)e-eš-ha-na. The word division for these two forms seems reasonably certain since the preceding form appears to be a verb with first plural and second singular inflectional ending respectively. This is not the case for (-)eš-hu-ur. In addition, it has been pointed out to me by Professor Joseph that this form may actually be a *uer/n stem with *-ur > -ur (for which see Eichner MSS 31: 73-76).

20. Oettinger (1979a: 201) points out the questionable nature of this form.

21. These forms, if related, may ultimately come from the PIE root *sep- 'hold in esteem' (IEW 909 and compare Sanskrit sapati 'woo', Avestan hap- 'support' and Latin sep-eliō 'bury'). The meaning of the Palaic word, 'purifies', is a reasonable extension of the basic meaning suggested by Pokorny.

22. It is doubtful that it could be argued, in defense of Watkins, that the quality of the epenthetic vowel in this case was [i] and hence irrelevant for a discussion of the development of e-vocalism (contra [i] see Oettinger 1979: 318). On the other hand one could suggest that the change *ě > ĩ was actually mirror-image, i.e. around velars.

23. Oettinger suggests such a possibility in (1979a: 201 footnote 25). But he assumes, wrongly we believe, that the spelling of Palaic ú-e-ir-ti indicates [e̞], a close [e], rather than [ē] because -ua(r)- suggests an original root aorist formation. However, as we have pointed out above, -ua-(r)- may not be related to *uer- and hence an acrostatic accented present (lengthened grade) is at least possible for this verb in Palaic.

24. This comparison was suggested to me by H. Eichner (personal communication).

25. One additional development of *ě may be noted here. It is probably true, as Eichner has pointed out (MSS 29: 28, 37, and MSS 31: 77), that final unstressed *ě was lost, at least under some circumstances, e.g. Palaic ki-i-ta-ar < *keitore and Palaic nu-ú-ku, nu-uk-ku < *nū-kue 'and now' (see Carruba 1970: 65-66).

26. Carruba (1970: 39) claims that the e-vocalism in this form may be the result of a nasalization process, though what type is not made clear. Carruba's suggestion must be considered dubious because of the fact that, since low vowels are more susceptible to nasalization, it would be odd to represent a nasalized low vowel with a symbol for a mid-palatal vowel.

27. This was suggested to me by H. Eichner (personal communication).

28. For a different explanation of length in this form see Oettinger (1979: 90).

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